REMARKS

Applicant has considered the nonfinal Office Action of June 30, 2009. No claims are added or cancelled. Claims 1, 5, 8, 14, 15, and 18 are amended. Claims 1-15 and 17-20 are pending. Applicant requests reconsideration.

Claims 1-15 and 17-20 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. Applicant traverses the rejection.

The Examiner objected to "the proteins" in claim 1 and "between proteins" in claim 8. Claims 1 and 8 are amended to specify the proteins are the modified protein and the protein originally in the food product.

The Examiner objected to "said product" in claim 1. This language has been replaced to specify the protein-containing food product.

The Examiner objected to "protein space network" in claims 1 and 11. The term "protein space network" is described in the specification as the network formed by disulfide bridges between proteins. Page 5, line 8 – page 6, line 2; Page 9, lines 21-32; Figure 2. Applicants submit that this term, read in light of the specification, is understood by one of ordinary skill in the art.

The Examiner objected to "to cause an interchange reaction... bridges between proteins" in claim 1. The amendments to claim 1 clarify that the disulfide bonds are formed between proteins. The Examiner referred to "intermolecular" and "intramolecular". To the extent a protein is considered one molecule, the claims now specify that they are between molecules, i.e. intramolecular.

The Examiner objected to "protective functional properties" in claims 8 and 18. This phrase has been removed.

The Examiner objected to "heating said product... said functional properties" in claims 8 and 18. This phrase has been amended and is now clear.

The Examiner objected to "to sulfonate said proteins" in claim 14. Applicants specified the protein.

The Examiner objected to "the total protein of the product" in claim 15. Applicants have clarified this meaning.

The Examiner objected to "the interchange modification" in claim 15. Applicants

now refer to the "reaction."

Applicant requests withdrawal of the indefiniteness rejection.

Claims 1-15 and 17-20 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Savolainen (WO 99/55170) in view of Fujimaki (U.S. Patent No. 4,145,455).

Claims 1-15 and 17-20 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Petruccelli (1995, Partial reduction of soy protein isolate disulfide bonds) in view of Fujimaki.

Applicant traverses the two § 103(a) rejections together.

Applicants understand the Examiner to be reasoning that Savolainen and Petruccelli both disclose proteins that have been modified by cleaving disulfide bonds to form free sulfhydryl groups, but do not disclose mixing the modified protein with another protein. Fujimaki teaches mixing modified protein with another protein and heating to obtain improved viscosity, gelling properties, and foaming properties. It would therefore have been obvious to modify proteins as disclosed by Savolainen / Petruccelli and incorporate them into other protein containing foods as disclosed by Fujimaki to alter the properties of the protein / food.

Applicants submit that there is no motivation to combine. In particular, Fujimaki's cysteine-enriched plastein (CySH-P) has different properties from the modified proteins of Savolainen / Petruccelli. Fujimaki describes this plastein as being "protein-like" and made by hydrolyzing proteins into polypeptides, then attaching a cysteine molecule to the polypeptides. See column 1, lines 10-17. Fujimaki also notes that the CySH-P itself has no foamability or coagulation properties. See column 2, lines 6-17. In contrast, the modified proteins of Savolainen / Petruccelli themselves already have improved properties.

In light of this difference between the modified proteins of Savolainen / Petruccelli and the CySH-P of Fujimaki, Applicants submit that one of ordinary skill in the art would not be motivated to <u>combine</u> a modified protein with an unmodified protein. Rather, Savolainen / Petruccelli teach the <u>substitution</u> of the unmodified protein with a modified protein.

It appears the Examiner might also be reasoning that Fujimaki's CySH-P could be replaced by the modified proteins of Savolainen / Petruccelli and obtain the same results as disclosed in Fujimaki. Applicants disagree with this reasoning. Please note that in Fujimaki the combination of CySH-P with protein appears to produce unexpected results. Thus, such results should not be expected when the modified proteins of Savolainen / Petruccelli are used instead. There is no reasonable expectation of success in the modification.

Applicant requests withdrawal of the two § 103(a) rejections.

CONCLUSION

For the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 1-15 and 17-20) are now in condition for allowance.

Respectfully submitted,

Fay Sharpe LLP

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Date

Jay F. Moldovanyi, Reg. No. 29,678
Richard M. Klein, Reg. No. 33,000
George P. Huang, Reg. No. 57,945
The Halle Building, 5th Floor
1228 Euclid Avenue
Cleveland, Ohio 44115-1843
216.363.9000

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Date: November 25, 2009	Name: Kathleen A. Nimrichter

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